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ABSTRACT

PROGRAM FOR THE DEVELOPMENT OF MACHINE INDEXING

Easy and rapid accessibility of information in a central file is a prerequisite to prompt production of intelligence. Recognition of the advantages of research in the field of information methodology led the CIA Management Advisor, in cooperation with OSI, to set up [redacted] an experimental program, under Contract XG-447, to explore the possibility of developing indexes which can be searched by automatic equipment. This experimental work was conducted in the field of agriculture. The machines used were specially designed and constructed [redacted] for the purpose of searching and correlating information.

This exploratory work has opened up the possibility of developing indexing methods for machine searching on a scale adequate to serve CIA's reference library requirements. This evaluation is based on exploratory work conducted [redacted] under Contract XG-447 and on demonstrations staged for CIA personnel. These new indexing methods, when worked out in final form, give promise of achieving considerable savings in manpower and cost while rendering a reference service of greatly improved effectiveness. The next phase of this development should be on a scale analogous to the pilot plant in a chemical development. The steps to be taken are the following:

1. Recasting the existing CIA Intelligence Subject Code (maintained in OGD) so that it may serve as a general framework for the detailed machine indexing system.
2. Developing the new system in detail for the field of agriculture. A portion of the work required in this connection has already been done [redacted] under Contract XG-447.
3. Test the indexing system developed for agriculture by indexing intelligence information in that field and conducting mechanized searches.
4. Development of an indexing system for other branches of natural science and technology. This is a large task whose accomplishment in full detail will require considerable effort. Our immediate goal is a preliminary form of such a general indexing system.
5. A broad program of investigation - theoretical in nature - of the underlying logic and mathematics of indexing methods and machine operations. The results of this study will guide us in setting up our over-all indexing system in final form.

25X1A5a1 The establishment and administration of this program will be facilitated
25X1A5a1 by setting it up at [REDACTED] to learning provided
25X1A5a1 the basis for previous exploratory work. Our development program is to be
under the direction of [REDACTED] who was in charge of the previous
exploratory investigation, and who has been a CIA consultant for the past
two years. [REDACTED] his work by a steering
committee [REDACTED] who, in his capacity
as Executive Secretary of the Interdepartmental Committee on Scientific
Research and Development, has acquired unusual insight into scientific
information problems facing government agencies. A small full time group -
of ten to fifteen persons - will be set up to work under [REDACTED] 25X1A5a1
in various fields of science and technology will be employed on a consulting
basis to assist with technical problems encountered in developing the indexing
system.

The cost of this program is estimated at \$10,000.

25X1A5a1 We have assurance of [REDACTED] support of this work with regard to providing
needed equipment. Detailed arrangements are to be worked out [REDACTED] 25X1A5a1
Experience gained in recent experiments and demonstrations will be used as a
basis for developing details of machine design with [REDACTED] experimental engineers. .

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